



Computing

Scheme of Work

Year 5 Overview



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Introduction

This document contains an overview of the units included in the Purple Mash Computing Scheme of Work for Year 5.

For detailed lesson plans and other information, see the documents for the individual units themselves.

Most lessons assume that children are logged onto Purple Mash with their own individual usernames and passwords, so their work will be saved in their own folders automatically and can be easily reviewed and assessed by the class teacher. If children have not used and logged onto Purple Mash before then they will need to spend some time before starting these lessons, learning how to do this. Children can be supported by having their printed logon cards (produced using [Create and Manage Users](#)) to hand.

Lesson plans also make use of the facility within Purple Mash to set activities for pupils which they can then complete and hand-in online (2Dos). This enables you to assess their work easily as well as distribute resources to all pupils. If children have not opened 2Dos before then they will need more detailed instructions about how to do this. A teacher's guide to 2Dos can be found in the teacher's section: [2Dos Guide](#).

If you are currently using a single login per class or group and would like to set up individual logins yourself, then please see our guide to doing so at [Create and Mange Users](#). Alternatively, please contact support at support@2simple.com or 0208 203 1781.

To force links within this document to open in a new tab, right-click on the link then select 'Open link in new tab'.

Linking the lessons to curriculum objectives

At the end of this document you will find a breakdown showing how the units relate to the curricula of England, Wales, Northern Ireland and Scotland. Within each unit document is a section called Assessment Guidance with exemplars of how a child at emerging, expected and exceeding level of achievement could demonstrate this in their work through the unit. These statements could also be used for reporting.



Data

This information can be used in association with the Purple Mash Data Dashboard to make and record judgements about children's outcomes and demonstrate progress over time.

For more information about the Data Dashboard see the [Data Dashboard manual](#) or view the videos within the Data Dashboard tool.

Differentiation

Where appropriate, guidance has been given on how to simplify tasks within lessons or challenge those who are ready for more stretching tasks.

Year 5 Whole Year Overview

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
YEAR 5	Unit 5.1 Coding						Unit 5.2 Online Safety			Unit 5.3 Spreadsheets						Unit 5.4 Databases				Unit 5.5 Game Creator				Unit 5.6 3D Modelling				Unit 5.7 Concept Maps				
	Number of Weeks – 6 Main Programs – 2Code						Weeks – 3 Programs - 2Publish Plus Writing Templates Display boards 2Connect (Mind Map)			Weeks – 6 Programs – 2Calculate						Weeks – 4 Programs – 2Investigate (database) Avatar creator				Weeks – 5 Programs – 2DIY 3D Writing Templates 2Blog (Blogging)				Weeks – 4 Programs – 2Design and Make Writing Templates				Weeks – 4 Programs – 2Connect				

Year 5 Unit Overview

Unit 5.1 – Coding

Lesson	Aims	Success Criteria
1	<ul style="list-style-type: none"> To review coding vocabulary. To use a sketch or storyboard to represent a program design and algorithm. To use the design to create a program. 	<ul style="list-style-type: none"> Children can use sketching to design a program and reflect upon their design. Children can create code that conforms to their design.
2	<ul style="list-style-type: none"> To design and write a program that simulates a physical system. 	<ul style="list-style-type: none"> Children can explain how their program simulates a physical system. Children can select the relevant features of a situation to incorporate into their simulation by using decomposition and abstraction. Children can reflect upon the effectiveness of their simulation.
3	<ul style="list-style-type: none"> To review the use of number variables in 2Code. To explore text variables. 	<ul style="list-style-type: none"> Children can explain what a variable is in programming. Children can set/change the variable values appropriately. Children know some ways that text variables can be used in coding.
4 & 5	<ul style="list-style-type: none"> To create a playable, competitive game. To combine the use of variables, If/else statements and Repeats to achieve the desired effect in code. To read code so that it can be adapted, personalised and improved. 	<ul style="list-style-type: none"> Children can create a game which has a timer and score pad. Children can use variables to control the objects in the game. Children can create loops using the timer and If/else statements.
6	<ul style="list-style-type: none"> To explore the launch command and use buttons within a program that launch other programs or open websites. To create a program to inform others. 	<ul style="list-style-type: none"> Children can include buttons and objects that launch windows to websites and programs. Children can code a program that informs others.

Unit 5.2 – Online Safety

Lesson	Aims	Success Criteria
1	<p>To gain a greater understanding of the impact that sharing digital content can have.</p> <p>To review sources of support when using technology.</p> <p>To review children's responsibility to one another in their online behaviour.</p>	<ul style="list-style-type: none"> Children know what Childnet SMART CREW is and have thought critically about the information that they share online both about themselves and others. Children know who to tell if they are upset by something that happens online. Children can use the SMART rules as a source of guidance when online.
2	<p>To know how to maintain secure passwords.</p> <p>To understand the advantages, disadvantages, permissions and purposes of altering an image digitally and the reasons for this.</p> <p>To be aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online.</p>	<ul style="list-style-type: none"> Children think critically about what they share online, even when asked by a usually reliable person to share something. Children have clear ideas about good passwords. Children can see how they can use images and digital technology to create effects not possible without technology. Children have experienced how image manipulation could be used to upset them or others even using simple, freely available tools and little specialist knowledge.
3	<p>To learn about how to reference sources in their work</p> <p>To search the Internet with a consideration for the reliability of the results of sources to check validity and understand the impact of incorrect information.</p> <p>Ensuring reliability through using different methods of communication</p>	<ul style="list-style-type: none"> Children can cite all sources when researching and explain the importance of this. Children select keywords and search techniques to find relevant information and increase reliability Children show an understanding of the advantages and disadvantages of different forms of communication and when it is appropriate to use each.

Unit 5.3 - Spreadsheets

Lesson	Aims	Success Criteria
1	Conversions of measurements.	<ul style="list-style-type: none"> Children can create a formula in a spreadsheet to convert m to cm. Children can apply this to creating a spreadsheet that converts miles to km and vice versa.
2	Novel use of the count tool.	<ul style="list-style-type: none"> Children can use a spreadsheet to work out which letters appear most often. Children can use the 'how many' tool.
3	Formulae including the advanced mode.	<ul style="list-style-type: none"> Children can use a spreadsheet to work out the area and perimeter of rectangles. Children can use these calculations to solve a real-life problem.
4	Using text variables to perform calculations.	<ul style="list-style-type: none"> Children can create simple formulae that use different variables. Children can create a formula that will work out how many days there are in x number of weeks or years.
5	Using a spreadsheet to plan an event.	<ul style="list-style-type: none"> Children can use a spreadsheet to model a real-life situation and come up with solutions that can be practically applied.

Unit 5.4 – Databases

Lesson	Aims	Success Criteria
1	To learn how to search for information on a database.	<ul style="list-style-type: none"> Children understand the different ways to search a database. Children can search a database in order to answer questions correctly.
2	To contribute to a class database.	<ul style="list-style-type: none"> Children have designed an avatar for a class database. Children have successfully entered information into a class database.
3 & 4	To create a database around a chosen topic.	<ul style="list-style-type: none"> Children can create their own database on a chosen topic. Children can add records to their database. Children know what a database field is and can correctly add field information. Children understand how to word questions so that they can be effectively answered using a search of their database.

Unit 5.5 – Game Creator

Lesson	Aims	Success Criteria
1	To set the scene.	<ul style="list-style-type: none"> Children can review and analyse a computer game. Children can describe some of the elements that make a successful game. Children can begin the process of designing their own game.
2	To create the game environment.	<ul style="list-style-type: none"> Children can design the setting for their game so that it fits with the selected theme. Children can upload images or use the drawing tools to create the walls, floor and roof.
3	To create the game quest.	<ul style="list-style-type: none"> Children can design characters for their game. Children can decide upon, and change, the animations and sounds that the characters make.
4	To finish and share the game	<ul style="list-style-type: none"> Children can make their game more unique by selecting the appropriate options to maximise the playability. Children can write informative instructions for their game so that other people can play it.
5	To evaluate their and peers' games.	<ul style="list-style-type: none"> Children can evaluate my their own and peers' games to help improve their design for the future.

Unit 5.6 – 3D Modelling

Lesson	Aims	Success Criteria
1	To be introduced to 2Design and Make.	<ul style="list-style-type: none"> Children know what the 2Design and Make tool is for. Children have explored the different viewpoints in 2Design and Make whilst designing a building.
2	To explore the effect of moving points when designing.	<ul style="list-style-type: none"> Children have adapted one of the vehicle models by moving the points to alter the shape of the vehicle while still maintaining its form.
3	To understand designing for a purpose.	<ul style="list-style-type: none"> Children have explored how to edit the polygon 3D models to design a 3D model for a purpose.
4	To understand printing and making.	<ul style="list-style-type: none"> Children have refined one of their designs to prepare it for printing. Children have printed their design as a 2D net and then created a 3D model. Children have explored the possibilities of 3D printing.

Unit 5.7 – Concept Maps

Lesson	Aims	Success Criteria
1	To understand the need for visual representation when generating and discussing complex ideas.	<ul style="list-style-type: none"> Children can make connections between thoughts and ideas. Children can see the importance of recording concept maps visually.
2	To understand and use the correct vocabulary when creating a concept map. To create a concept map.	<ul style="list-style-type: none"> Children understand what is meant by 'concept maps', 'stage', 'nodes' and 'connections'. Children can create a basic concept map.
3	To understand how a concept map can be used to retell stories and information.	<ul style="list-style-type: none"> Children have used 2Connect Story Mode to create an informative text.
4	To create a collaborative concept map and present this to an audience.	<ul style="list-style-type: none"> Children have used 2Connect collaboratively to create a concept map. Children have used Presentation Mode to present their concept maps to an audience.

English National Curriculum Objectives (Key Stage 2)

National Curriculum Objective	Strand	Units
Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	Computer Science	5.1 5.5
Use sequence, selection and repetition in programs; work with variables and various forms of input and output.	Computer Science	5.1
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.	Computer Science	5.1
Understand computer networks, including the Internet; how they can provide multiple services, such as the World Wide Web; and the opportunities they offer for communication and collaboration.	Computer Science	5.2
Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.	Information Technology	Various Search technologies are taught more specifically in unit 4.7. Children will utilize this knowledge in many Internet based sessions in all areas of the curriculum.
Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.	Information Technology	5.1 5.3 5.4 5.5 5.6 5.7
Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Digital Literacy	5.2 and discussed in other units